

**PATENT**

Docket No.: 16356.668 (DC-03278)

Customer No. 000027683

**CLAIMS**

What is claimed is:

1. An information handling system comprising:
  - a processor;
  - a memory coupled to the processor;
  - an interrupt controller coupled to the processor;
  - a dynamic router, coupled to the interrupt controller, for allocating interrupts to devices;
  - a first device which requests a first interrupt and which is assigned the first interrupt by the dynamic router; and
  - a second device which requests the first interrupt and which is instead assigned a second interrupt by the dynamic router such that interrupt requests are dynamically allocated to provide a more balanced interrupt distribution.
2. The information handling system of claim 1 further comprising an interrupt table for storing information relative to which interrupt is associated with which device.
3. The information handling system of claim 2 further comprising an operating system and a data path between the operating system and the interrupt table such that the operating system is informed of the dynamically allocated interrupts by the interrupt table.
4. The information handling system of claim 1 further comprising a third device which generates a higher number of interrupt requests than the first device, the first and third devices sharing the first interrupt.

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1 5. The information handling system of claim 1 further comprising a third device  
2 which generates a higher number of interrupt requests than the second  
3 device, the second and third devices sharing the second interrupt.

1 6. The information handling system of claim 1 further comprising a third device  
2 which generates a lower number of interrupt requests than the first device,  
3 the first and third devices sharing the first interrupt.

1 7. The information handling system of claim 1 further comprising a third device  
2 which generates a lower number of interrupt requests than the second device,  
3 the second and third devices sharing the second interrupt.

1 8. An information handling system handling comprising:  
2 a processor situated on a circuitry board;  
3 a plurality of expansion slots mounted on the circuitry board for  
4 receiving devices;  
5 a memory, coupled to the processor, to facilitate execution of programs  
6 by the processor;  
7 an interrupt controller coupled to the processor;  
8 a dynamic router, coupled to the interrupt controller, for allocating  
9 interrupts to devices;  
10 a first device, situated in one of the expansion slots, which requests a  
11 first interrupt and which is assigned the first interrupt by the dynamic router;  
12 and  
13 a second device, situated in another of the expansion slots, which  
14 requests the first interrupt and which is instead assigned a second interrupt  
15 by the dynamic router such that interrupt requests are dynamically allocated  
16 to provide a more balanced interrupt distribution.

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- 1 9. The information handling system of claim 8 further comprising an interrupt  
2 table for storing information relative to which interrupt is associated with which  
3 device.
- 1 10. The information handling system of claim 9 further comprising an operating  
2 system and a data path between the operating system and the interrupt table  
3 such that the operating system is informed of the dynamically allocated  
4 interrupts by the interrupt table.
- 1 11. The information handling system of claim 8 further comprising a third device  
2 which generates a higher number of interrupt requests than the first device,  
3 the first and third devices sharing the first interrupt.
- 1 12. The information handling system of claim 8 further comprising a third device  
2 which generates a higher number of interrupt requests than the second  
3 device, the second and third devices sharing the second interrupt.
- 1 13. The information handling system of claim 8 further comprising a third device  
2 which generates a lower number of interrupt requests than the first device,  
3 the first and third devices sharing the first interrupt.
- 1 14. The information handling system of claim 8 further comprising a third device  
2 which generates a lower number of interrupt requests than the second device,  
3 the second and third devices sharing the second interrupt.

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- 1 15. A method of allocating interrupts in an information handling system  
2 comprising:  
3 assigning a first interrupt to a first device when the first device requests  
4 to be assigned the first interrupt; and  
5 assigning a second interrupt to a second device when the second  
6 device requests to be assigned the first interrupt.
- 1 16. The method of claim 15 further comprising informing an operating system in  
2 the information handling system that the second interrupt is assigned to the  
3 second device.
- 1 17. The method of claim 15 further comprising determining if the first device  
2 generates a large number of interrupt requests and if so sharing the first  
3 interrupt with a third device which generates a lower number of interrupt  
4 requests than the first device.
- 1 18. The method of claim 15 further comprising determining if the second device  
2 generates a large number of interrupt requests and if so sharing the second  
3 interrupt with a third device which generates a lower number of interrupt  
4 requests than the first device.
- 1 19. The method of claim 15 further comprising determining if the first device  
2 generates a low number of interrupt requests and if so sharing the first  
3 interrupt with a third device which generates a high number of interrupt  
4 requests.
- 1 20. The method of claim 15 further comprising determining if the second device  
2 generates a low number of interrupt requests and if so sharing the second  
3 interrupt with a third device which generates a high number of interrupt  
4 requests.
- 1 21. The method of claim 15 wherein the first and second devices populate  
2 respective first and second expansion slots in the system.

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- 1     23.     The method of claim 15 wherein one of the first and second devices  
2     populates an expansion slot in the system and the other of the first and  
3     second devices is an on-board device.